B2 (Contd)

--40. A device as in claim 39 which includes circuitry to deliver a quantity of an additive to an estimated volume of delivered fluid based upon the received estimated flow rates.--

REMARKS

In responding to the outstanding Office Action, we are submitting herewith a set of formal drawings responsive to Item 10 of the Summary of the Office Action. Additionally, attached hereto is a Declaration from Mr. Anton Belehradek, one of the named inventors. As explained in the attached Declaration, Wissenbach et al is a sensor driven system which makes physical measurements to determine fluid flow rates for purposes of determining volumes of fluid. Also as explained in the attached Declaration, Wissenbach et al do not address limitations in the pending claims including:

> "circuitry for storing a manually settable fluid flow rate parameter, coupled to the control circuitry" (claim 1);
>
> "circuitry coupled to the power supply, wherein the circuitry stores an expected flow rate parameter and at least one flow delivery interval" (claim 20 amended);
>
> "a manually operable input device for enabling a user to enter an expected flow rate parameter ... and instructions, executable by the control circuitry for estimating a quantity of pumped fluid based only the expected flow rate parameter and one or more time intervals." (claim 34)

None of the above limitations are present in Wissenbach et al. The claims have all been rejected as anticipated by Wissenbach et al. As required by the MPEP:

> "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference ... the identical invention must be shown in as complete detail as is contained in the claim ... the elements must be arranged as required by the claim" (MPEP, § 2131, page 2100-69, August, 2001).

The above standard is clearly not met as made clear by the attached Declaration of Mr. Anton Belehradek. This Declaration submitted pursuant to 37 CFR § 1.132 traverses the outstanding anticipation rejections. The substantial differences between the pending claims and Wissenbach et al as set forth in the attached Declaration along with the comments in this Amendment are more than sufficient to overcome the Examiner's prima facie case of anticipation.

Simply put, there can be no anticipation where the claimed invention includes limitations not present in the alleged anticipatory prior art. Several new claims also not anticipated and allowable for similar reasons have been added by this Amendment. Dependent claims add additional structure not anticipated nor made obvious by the prior art of record.

For all of the above reasons, the pending claims are allowable, and allowance of the application is respectfully requested.

Respectfully submitted,

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Marked Version of the Amended Claims

36. (Amended) A meter as in claim 34 wherein the control circuitry includes executable instructions enabling a user to program a fluid [delivering] delivery schedule during a predetermined time interval, and in response to a previously entered flow rate parameter an estimated delivered quantity of fluid can be established for an executed delivery schedule.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: John R. Kochan, Jr.

For: Flow Rate Calculation System

Serial No.: 09/714,385

Filed: November 16, 2000

Examiner: Xuan Hien Vo

Art Unit: 2863

Docket No. 8367/86196

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on the date listed below:

Feb 25, 2003

Lauren K. Leiber

(Date)

DECLARATION OF ANTON BELEHRADEK, JR.

The undersigned hereby declares that:

1. I, the undersigned, am one of the named inventors of the above-identified patent application;

2. I have reviewed and am familiar with an outstanding Office Action mailed December 2, 2002 rejecting the claims of the above-identified application;

3. I have reviewed and am familiar with Wissenbach et al US Patent 5,633,809 entitled Multi-Function Flow Monitoring Apparatus With Area Velocity Sensor Capability;

4. I have reviewed and am familiar with the pending claims of the above-identified application as well as the text of the application and associated figures;

5. I have 6 years experience in the design of pump control systems;

6. Wissenbach et al, based on my study thereof, is a sensor driven pump control system. Wissenbach et al take in signals from a variety of different types of flow sensors, or fluid monitoring sensors, and carry out various control functions. Wissenbach et al does not estimate a quantity of pumped fluid based on a user entered expected flow rate and one or more pumping time intervals as claimed.

7. Wissenbach et al expressly describes the use of flow sensors to carry out control functions. In this regard, they state:

> "A multi-function fluid flow monitoring apparatus capable of measuring fluid flow-related variables of a fluid in a channel on the basis of signals from any one or more of a plurality of different types of flow sensors. Such different types of flow of sensors may include, for example, a bubbler-type pressure sensor, a submerged pressure transducer, an ultrasonic transducer, and/or a velocity sensor forming part of an area-velocity sensor system, each of which sensors may be selectively connected to the apparatus as needed to accommodate various monitoring conditions." (Abstract, lines 1-10).

In the Summary section, Wissenbach et al amplify upon the use of fluid flow sensors in carrying out processing when they state:

> "The invention provides an apparatus for monitoring at least one flow-related variable of fluid flow in a channel, comprising an integral operating unit provided in a unitary case, the integral operating unit including computer means for controlling the apparatus and input means for receiving detected signals related to fluid flow in the channel. The input means is selectively connectable to any selected one or more of a plurality of different types of flow-sensing means for producing signals related to the fluid flow in the channel ... In a preferred embodiment, a plurality of flow sensor control modules incorporate the signal processing means and other interface means, with each control module being associated with a particular type of flow sensor. The plurality of flow sensors may preferably include at least a bubbler sensor, a submerged sensor, an ultrasonic sensor, and a velocity sensor. ... It is an object of the invention to provide a fluid flow monitoring apparatus which is completely contained in a compact, unitary case and which has the capability of measuring fluid flow-related variables on the basis of outputs from any one or more of a plurality of

different types of flow sensors." (Col. 3, line 66 through Col. 4, line 61). (Emphasis added)

The above quotes, in my opinion, make clear that Wissenbach et al is using signals from flow sensors to establish quantities of fluid flow. My conclusion is confirmed by various of the figures of Wissenbach et al. These include:

a. Fig. 6 which is a perspective view of the monitoring unit of Wissenbach et al having a submerged flow sensor connected thereto and shown in a mounted position within a sewer manhole;

b. Fig. 7 is a perspective view of the monitoring system of Wissenbach et al having a bubbler flow sensor connected thereto, shown in a mounted position within a sewer or manhole;

c. Fig. 11 is a perspective view of a monitoring system, according to Wissenbach et al, having a ultrasonic flow sensor connected thereto and shown in a mounted position within a sewer or manhole;

d. Fig. 12 is a side elevational view of a velocity sensor, part of an area-velocity sensor system usable in Wissenbach et al's flow monitoring apparatus as mounted in an open fluid channel; and

e. Fig. 15 is a flow diagram illustrating operational sequences of the apparatus of Wissenbach et al with respect to different types of flow sensors.

Wissenbach et al in a block diagram, Fig. 5, disclose program storage (flash memory) and data storage (RAM). There is no disclosure in Fig. 5 nor in the detailed description of Wissenbach et al relative to Fig. 5 of any capability or "circuitry for storing a manually settable fluid flow rate parameter" as referred to on page 2, lines 10, 11 of the Office Action.

Instead, Wissenback et al only describe the use of signals from flow sensors for purposes of establishing fluid flow. In this regard, Wissenbach et al state:

> "The user is thus able to adapt the apparatus for use in a wide variety of different site conditions simply by selecting a type of flow sensor which is suitable for the conditions at a given monitoring site, instead of having to switch to an entirely different flow meter. In the preferred embodiment described below, the apparatus is adapted to measure fluid flow-related variables on the basis of outputs from at least four different types of sensors, i.e., a bubbler-type pressure sensor, an ultrasonic-type sensor, a submerged-type sensor and velocity sensor forming part of an area-velocity sensor system. It will be understood, however, that the apparatus is capable of accommodating additional and alternative types of sensors by means of suitable control modules which may be integrally connected with the computer control means of the apparatus as desired." (Col. 7, lines 31-46, Wissenbach et al). (Emphasis added).

The monitoring system of Wissenbach et al is driven by signals from the various types of flow sensors to produce a quantity of fluid flow based on actual physical measurements of flow rate. For example, as described by Wissenbach et al:

> "The microprocessor of the apparatus, on the basis of inputs from sensor 31 processed by control module 30, converts the level of reading to a flow rate based on the level-to-flow relationship of the channel configuration. The flow rate relationship is determined on the basis of the dimension, declination and inside roughness of the pipe." (Col. 8, lines 41-48, Wissenbach et al).

Further:

> "The Flow Measuring Programming allows the microprocessor to calculate the fluid depth, flow rate, velocity and other fluid flow-related variables on the basis of process signals received from the sensor 31 or one of the other interchangeable sensors described below. ... For example, one such operation comprises a totalizer feature in which the microprocessor calculates and keeps a running total

of the fluid quantity discharged over a given time period, on the basis of inputs from a flow sensor being used with the apparatus, with the running total being displayed on the display 4." (Col. 9, line 47 through Col. 10, line 16, Wissenbach et al).

Wissenbach et al do permit a user to establish time based logging intervals for fluid flow and fluid level. (See Col. 10, lines 29-34, Wissenbach et al). However, these time intervals are samples and are quite unlike the "manually settable fluid flow rate parameter" (claim 1), or "an expected flow rate parameter" (claim 20) or a user-entered "expected flow rate parameter" (claim 34).

f. I have also compared the structure of Wissenbach et al to pending claim 1. Pending claim 1 includes:

"circuitry for storing a manually settable fluid flow rate parameter, coupled to the control circuitry".

As discussed above, the above circuitry is simply not present in Wisenbach et al. Neither the block diagram of Fig. 5 nor the text of Wissenbach et al disclose or describe the circuitry for storing quoted above.

g. I have also compared Wissenbach et al to the wording of amended claim 20. Amended claim 20 includes the following circuitry not present in Wissenbach et al:

"circuitry, coupled to the power supply, wherein the circuitry stores an expected flow rate parameter in at least one flow delivery interval".

Wissenbach et al disclose a monitoring system which responds to signals from various fluid flow sensors which measure actual flow in a pipe. This, in my opinion, is unlike and quite different from the above-quoted circuitry of claim 20.

h. I have also compared claim 34 to the monitoring circuitry of Wissenbach et al. Claim 34 includes:

> "a manually operable input device for enabling a user to enter an expected flow rate parameter ... and instructions, executable by the control circuitry for estimating a quantity of pumped fluid based on only the expected flow rte parameter and the one or more time intervals."

Wissenbach et al do not provide any capability to enable a user to enter an expected "flow rate parameter" which parameter is then used to estimate pumped volume as claimed. Instead, Wisenbach et al establish a flow rate parameter based on actual measurements from flow sensors as described above and use that measured parameter in determining fluid volume.

I hereby declare that all statements made herein of my knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fie or imprisonment or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Anton Belehradek, Jr. 2-21-03

Anton Belehradek, Jr.